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FRAGMENTARY OBSERVATIONS OF THE PROGNOSIS OF BRAIN SYPHILIS.*

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Few diseases tax the prognostic and therapeutic resources of the physician more than brain syphilis. And the fragmentary remarks offered are, indeed, but a small part of a great question, yet it is hoped that they may interest the members and mayhap recall some forgotten knowledge of this not uncommon disease.

Correct prognosis waits on accurate diagnosis:

In no disease is this more true than in nerve syphilis. In speaking of diagnosis it is not meant a simple naming of the disease, but taking in with a wide grasp the character, progress, location and extent of the disease, giving due weight and consideration to the personal factor. A lack of vigilance or acumen is often responsible for the frequent slipshod diagnosis in nerve syphilis. These early mistakes materially increase the gravity of the prognosis. The ear that is stopped by ignorance or reprehensible carelessness is ill fitted to listen to the complaining prodroma of nerve syphilis pleading for the salvation and integrity of a threatened organ. Prognostic acumen comes only through wide knowledge and keen thoughtful bedside observation; and he that aspires to this the greatest and most difficult of all medical attainments, must ever be the student of detail and the observer of trifles. Therefore in making a forecast as to the probable outcome of a case of syphilis of the brain, we must bring to our aid, not only an accurate knowledge of the nervous system, but a complete understanding of the nature of the specific infection.

At the very outstart we are confronted by a very serious question: *Is the lesion caused by syphilis?* Upon a proper solution of this question depends the value of all our data. It is disconcerting to reflect that much of this data is rendered questionable by the accretions of three classes of observers. The first, and a despicable one, has left a heritage of what Tyndall called, "The scientific use of imagination," to be stumbling blocks along the whole way. The second has based his opinions and statements on the categorical answer of his patient to the question, Have you

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had syphilis? The third one is apt to lay at the door of the protean disorder every disease, accidental or consequential, which may attack man in his natural life. We have no words for the savage arraignment of the first of these observers. Of the last two, one is as bad as the other; one allows himself to be fooled, the other fools himself, while all three fool us all.

Data accumulated by such observers is trash, but they are such busy fellows and write so much! It is not alone in the bee colony that the drone makes the loudest buzz. For facts we must turn to the one that brings a mind well stored with the literature of the subject, uses all the knowledge of the acute clinician, depends little on any patient's statement, but more on his five senses and a thorough knowledge of the varied manifestations of the specific disease, its peculiar and nearly always recognizable mode of attack on the nervous structures of the body, and thus we will be enabled to winnow a few grains from the stacks of chaff and rubbish piled high by observers, if not dishonest, are at best one-eyed and see but the outline and mistake the nature of substance and shadow.

The general laws of prognosis in acute brain disease hold good in acute specific lesions to a limited extent only.

The reason for this lies in the fact that the phenomena produced by brain syphilis is so capricious, variable, and often incomplete as to constitute a distinct class. What other morbid process can we call to mind which will one day present such alarming symptoms as aphasia, coma, convulsions, or paralysis, and be absent the next? What other disorder will render a man four times aphasic, once deaf, partially blind, and three times hemiplegic, and then admit of recovery with only a slight halt as a souvenir of his experiences? Such a patient who had recovered from most of these afflictions under the able care of Dr. Lowman, wound up his experiences while with me, and has since remained well for a period of ten years, and filling with credit a very responsible position.

When, however, hemorrhage results from syphilis of a vessel we no longer have the cause but the result to deal with, and in no way does it differ in its immediate effects or final results from a hemorrhage from any other cause.

The same can be said of acute softening from any syphilitic process in the brain, it is only a secondary result, and in no way differs either in effect or prognosis from softening from other disease. In this connection it is well to remember what Wood says, "Prolonged deep stupor in persons suffering from cerebral syphi-

lis does not prove the existence of extensive brain softening, and is not incompatible with subsequent complete recovery; as an element of prognosis is of serious but not fatal import."

Since we have the results of an infection to deal with that has little tendency to self-limitation, it must follow that both brain and cord lesions have a great tendency to relapse.

This is especially true of brain syphilis. Early lesions of vascular origin are apt to be followed in later life by sclerotic processes and slowly developed degenerations. Collins has called especial attention to these facts, and as elements of prognosis should be remembered. It is frequently remarked in cases in which, in a comparatively short time after infection, the nervous system is attacked, yields to treatment, the patient is apparently cured, goes on in good health for years, when some symptoms evidently due to the irritative presence of the cicatrix of the old lesion appear along with proof of a renewal of activity of the specific process elsewhere in the brain or spinal cord. The prognosis in these cases is not good.

In giving a prognosis we should remember that every step of the highway of recovery from brain syphilis is beset by hidden dangers and deadly pitfalls into which the poor victim may suddenly tumble to the consternation of his friends and chagrin of his physician. It is a clinical fact that while one bit of syphilitic tissue exists within the brain its possessor will be liable to any one of those sudden accidents of anæmia, congestion, or inflammation which so often confound our predictions. To illustrate: a private patient about recovered from a specific hemiplegia, without warning began to have convulsions. One followed another until he had seven in four hours, and yielded only to a copious venesection. Recovery was prompt without increase of paralysis, but the memory was seriously and permanently impaired.

Age, sex, social status, alcoholism, cachexia, and sexual excesses, all have vital prognostic importance.

Women seem less liable to diseases of the middle cerebral arteries, and as gummatous meningeal and cortical diseases are less liable to fatal results, sex becomes an element in prognosis.

While infection by syphilis in youth conduces to the development of nerve syphilis, yet the elastic powers of recuperation which youth possesses is certainly a good prognostic. To the comparative youth of the victims of brain syphilis, I believe we owe a favorable tendency. It is pertinent to recall in this connection, that two-thirds of all cases of syphilitic softening of the brain

occur between the years of twenty and forty; being very rare before twenty and after fifty. Atheroma, on the other hand, is a disease which increases in frequency with each year of life beyond the middle term, and occurs rarely before forty. Thus we see that syphilitic obstruction of the arteries of the brain occurs at an age when the brain is in its period of greatest functional activity, and its nutritional channels widest; when compensation, and collateral circulation are most liable to take place; at an age when the action of medicines is most profound and when the processes of repair have their greatest activity.

Is it not reasonable to suppose that although certain brain tracts may be so deprived of blood as to inhibit function yet receive enough nourishment to maintain its structural integrity long enough for judicious treatment to remove the specific new growth which has occluded the artery?

Most clinicians agree that when syphilis is acquired late in life and attacks the nervous system, it does so with exceptional violence and malignancy.

The underfed, overworked, ill-clad poor, surrounded by unhygienic conditions, and unable to secure skilled treatment, must succumb more readily.

A life laden with syphilis and given to excesses of any kind is always in danger. *Alcohol and syphilis are the twin devils of pathology, which neither fleet-footed mercury can overtake nor iodine exorcise.* But the continued strain put upon the branches of the middle cerebral arteries by the licentious libertine who nightly seeks a new partner for his sexual carouse soon frees society of the diseased degenerate. Truly nature does not treat with her enemies.

The frequent death of men with degenerate arteries during the sexual act (usually illicit) brings to mind the cortical epilepsy of the jack rabbit that follows orgasm, and a like condition of the young stallion as he covers his first mare. These states are evidently due to a tremendous increase of tension in the cerebral arteries. Apropos to this I desire to record the belief that persons who are illicit, promiscuous, and excessive indulgers in sexual intercourse are peculiarly liable to syphilis of the brain.

Syphilis of the nervous system as a pathological process differs in no way from syphilis elsewhere except as influenced by its histological environments. This applies particularly to the specific affections of the nervous system which occur in the early stages of syphilis and not to those late manifestations of the disease as

represented by general paralysis and tabes dorsalis, and which some believe constitute a fourth stage of syphilitic disease. With the above limitations syphilis of the nervous system as syphilis *per se*, is as amenable to treatment as syphilitic disease elsewhere. Clinical experience has demonstrated that our ability to control the production and to cause the absorption of specific adventitious tissue deposited in the nervous system to be as marked as in any other part of the organism, but we have no control of the base tissue which the normal process of repair bring to fill the gap left by the breaking down and absorption of the specific new growth. The inherent tendency for scar tissue to contract cannot be controlled. In the grosser structures of the body this behavior of scar tissue matters little, but in the delicate structures of the nervous system this scar may cause as much or more irritation than the specific neoplasm itself. Hence paralysis, loss of function, irritative lesions, etc., which ensue as a result of such secondary process are as liable to be lasting as from any other pathological cause.

Syphilitic apoplexies are seldom rapidly fatal, and are less liable to be followed by permanent injury.

The principal reason for this favorable view is that the great majority of the specific brain lesions are rather slowly developed, consist of specific tissue over which we have marked therapeutic control.

Gowers and most authorities give good prognoses in cerebral apoplexies, as regards immediate danger to life in the first attack, but declare the danger to be much increased by succeeding ones. In syphilitic apoplexies this does not obtain, as we observe repeated attacks and oftentimes final and complete recovery.

The lesions of the nervous system produced by syphilis in the secondary or blood stage of the disease are far more remedial than the late lesions.

While there are acknowledged exceptions to this proposition, and clinicians sometimes get brilliant results from proper treatment of late lesions, yet with far greater frequency are left to reflect upon what Joseph Collins terms the "powerlessness of therapy in the tertiary stage." The cause of this wide difference in the responsiveness to treatment of the early and late lesions is not far to seek. In the early lesions the new tissue partakes of the character of the specific neoplastic material which infiltrates the capillaries of the neuroglia, or the capillaries of the blood vessels, over which tissue we have marked therapeutic control. But in the

late lesions the process has been more insidious, and the tunica intima of the arteries have been infiltrated by the specific products to a point of partial or total obliteration of their lumen, with a gradual cutting off of the nutrient supply of the neurons. It is not hard to conceive that the starved nerve cells shrivel up and cease function, one after another, until the limit is reached, when the remaining ones can no longer compensate for their disabled fellows. This is usually the time when the patient is brought to the neurologist, with an atypical, widely varying set of degenerations to receive a comparatively hopeless prognosis.

To the specific endarteritis we must look for the principal cause of syphilis of the large ganglia. This is because the specific endarteritis is specially prone to attack the branches of the middle cerebral artery. Here in the internal capsule a small lesion whether due to hemorrhage or a localized softening, may give rise to widespread and permanent palsies. Lesions affecting this portion of the brain are very liable to resemble ordinary apoplexy, and have the same prognosis.

Thrombosis is by far the most frequent lesion met with as a result of the specific endarteritis; hence the gradual occlusion of the artery is accompanied by a slow onset of the apoplectic symptoms, as Sachis says, "It is not as apoplexy in the good old sense of the word, where the victim is 'struck down' as by an unseen hand." The resulting hemiplegia is often irregular and incomplete. Such a paralysis may be as lasting as that due to other disease, but in many instances recovery is rapid and complete. Buzzard (Clin. Lectures on Disease of the Nervous System, London, 1892) details the case of a man who after a specific hemiplegia lay quiet and somnolent one month, and then so far recovered as to win a rowing match on the Thames. Whether the thrombus becomes canalized or recession of the bulging arterial coat occurs, or collateral circulation does its duty more fully, possibly because it has been prepared for the emergency by the gradual onset of the actual accident, is difficult to state; but certain it is that acute softening and hence permanent loss of function is less liable to supervene when such accident is due to syphilis than from other causes.

Our foreign friends, led by Dr. Gowers, take a very pessimistic view of the curability of these lesions. I believe the cause of this pessimism lies in the therapy of the European specialists. When Gowers delivered his famous lectures on Syphilis of the Nervous System, the English physicians had not recognized the wonderful effects to be gained by the massive doses of the iodides,

which the Americans vainly advised them to administer. In fact, European physicians consider one to three drachms a day of kali-iodide to be heroic medication.

Prognosis of syphilis of the convexity is usually good. The prodromata are usually so marked as to demand early treatment, which is the salvation of these cases. The sudden or gradually developed attacks of coma, slight and transient palsies or somnolent conditions are usually the result of localized congestions or anæmia, and are not always, even if long continued, of bad import.

I have the notes of a man with an incomplete syphilitic hemiplegia, who so far recovered as to be able to be at his office and with little aid accomplish a considerable amount of work. But it was noticed that he had staring spells and peculiar "absences," from which he would suddenly arouse and for a time renew his work with a feverish energy, only to relapse into his former condition. He refused treatment, and for six months continued in this state, which finally culminated in several severe epileptic convulsions. Treatment was resumed and pushed, and he recovered, but with considerable loss of memory. He has remained well for seven years.

In the localized convulsive seizures which are usually termed Jacksonian epilepsy, the prognosis is usually good. The following case, which I saw with Dr. Brokaw, is illustrative:

Complete hemispasm of left side of young married woman, with a distinct history of specific infection eight years previous. Signal symptoms begin in great toe, extending successively to leg, thigh, trunk, forearm and hand; lastly to neck and face until the whole left half of the body was in active clonic spasm, which lasted about one minute, leaving a typical functional palsy, which disappeared in about six hours. Attack was frequently followed by aphasia and always by severe headache. She had over seventy-five attacks. Specific treatment made a complete cure in the case, six years having passed with no return, although she has had no treatment in five years.

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